Remarks

The above Amendments and these Remarks are in reply to the Office Action mailed December 26, 2007.

Applicants gratefully acknowledge the courtesy of an interview with Examiner Hadi Akhavannik on February 15, 2008. During the interview the participants discussed a proposed amended version of Claim 1.

I.   Summary of Interview

Applicants gratefully acknowledge the courtesy of an interview with Examiner Hadi Akhavannik on February 15, 2008. During the interview the participants discussed a proposed amended version of Claim 1, the substance of which incorporated the limitations of dependant Claim 16 (as previously presented) into independent Claim 1 (as previously presented). The differences between the proposed amended version of Claim 1 and Crinon (US 6,331,859) (hereinafter referred to as "Crinon") were discussed. No agreement was reached during the interview.

II.   Summary of Examiner's Objections and Rejections

Prior to the Office Action mailed on December 26, 2007, Claims 1-12 and 14-21 were pending in the Application. In the Office Action, Claims 1-2, 12, and 14-21 were rejected under 35 U.S.C. §102(b) as being anticipated by Crinon. Claims 3-11 were rejected under 35 U.S.C. §103 as being unpatentable over Crinon in view of Hansen et al. (20020038456) (hereinafter referred to as "Hansen").

III.   Summary of Applicants' Amendments

The present Reply amends Claims 1, 11, 16, 17 and 21; cancel Claims 2, 14-15 and 18-20; and add new Claims 22-26, all as shown above. Applicants respectfully reserve the right to prosecute any originally presented or canceled claims in a continuing or future application.

IV. Claim Rejections under 35 U.S.C. §102(b)

Claims 1-2 and 12-21 were rejected under 35 U.S.C. §102(b) as being anticipated by Crinon.

Claim 1

Claim 1 has been amended by the current Reply to more clearly define the embodiment therein. As amended, Claim 1 defines:

1.   (Currently Amended) A method for discriminatively selecting keyframes representative of segments of a source digital media, comprising the steps of:
    obtaining said source digital media for which keyframes are to be selected, wherein said digital information contains a plurality of segments;
    pre-processing said digital information to obtain a plurality of feature vectors; and
    discriminatively selecting a keyframe for each segment, wherein the keyframe for each segment is selected by comparing a candidate keyframe of one segment with other frames from the remaining plurality of segments and determining a dis-similarity value of said candidate keyframe dependent upon said step of comparing, wherein each selected keyframe is both representative of the segment the selected keyframe originates from and distinguishable from other selected keyframes which are representative of the remaining plurality of segments.

As set forth during the interview as well as in the Examiner's own Response to Arguments in the Office Action, Crinon appears to disclose a system that first segments a video by choosing boundaries that are substantially different from each other and then selects a keyframe to represent each segment. The keyframes are selected for each segment independently and in a linear fashion. For example, for a video including a dialog having a sequence of alternating shots between two speakers, Crinon would likely create a different video segment for each alternating shot of the two speakers. Accordingly, segments 1, 3, 5 and so on would be focused on a first speaker and segments 2, 4, 6 and so on would be focused on the second speaker. Once these segments have been created, Crinon determines a keyframe for each segment in a linear fashion. In other words, the system in Crinon is not concerned with having the keyframe from segment #1 be different than the keyframe from segment #3 as long as the keyframes are independently representative of the segments they originate from. Thus, the candidate keyframes in segment #3 (or any other out-of-class candidate keyframe) will not

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be taken into consideration when selecting the keyframe for segment #1 and the keyframes for segments #1 and #3 may be identical using <u>Crinon</u>.

Applicants' invention embodied in Claim 1, however, compares a candidate keyframe of one segment with other frames from the remaining plurality of segments to determine dis-similarity values for the candidate keyframes. Those dis-similarity values for the candidate keyframes are considered in determining which candidate keyframe should be the representative keyframe for each segment. Accordingly, going back to the example set forth above for <u>Crinon</u>, Applicants' invention embodied in Claim 1 would evaluate the candidate keyframes in segment #3 (as well as the other out-of-class candidate keyframes) before selecting a keyframe for segment #1. This helps to ensure that all of the selected keyframes for the video are truly distinguishable from each other. Accordingly, <u>Crinon</u> fails to anticipate Claim 1 of Applicants' invention.

It is also noted that Claim 1 as amended incorporates the limitations of former Claim 15 (which was previously presented but now has been cancelled in this Reply). Former Claim 15 was rejected as being anticipated by <u>Crinon</u> at Column 5, lines 35-65 since <u>Crinon</u> "discloses finding the greatest and least cumulative distances." Claim 1 as amended, however, does not claim "finding the greatest and least cumulative distances." Accordingly, it is respectfully submitted that <u>Crinon</u> cannot reasonably be interpreted to anticipate the use of dis-similarity values in the invention embodied in Claim 1 as amended.

In view of the comments provided above, Applicants respectfully submit that the embodiment defined by Claim 1 is neither anticipated by, nor obvious in view of the cited reference, and reconsideration thereof is respectfully requested.

Claim 17

Independent Claim 17 has been amended to more clearly define the embodiment therein. In Claim 17, the keyframe is discriminatively selected using latent semantic indexing, wherein a mean feature vector is determined for each segment, the candidate keyframe having the feature vector closest to the mean feature vector being selected as the keyframe for each segment, wherein each selected keyframe is both representative of the segment the selected keyframe originates from and distinguishable from other selected keyframes which are

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representative of the remaining plurality of segments. Crinon does not disclose a system wherein keyframes are selected using latent semantic indexing. Accordingly, Crinon fails to anticipate Claim 17 of Applicants' invention.

Claim 21

Independent Claim 21 has been amended similar to Claim 1 to more clearly define the embodiment therein and the comments provided for Claim 1 above are incorporated by reference herein. In view of the comments provided above for Claim 1, Applicants respectfully submit that the embodiment defined by Claim 21 is neither anticipated by, nor obvious in view of the cited reference, and reconsideration thereof is respectfully requested.

Claim 12 and 16

Claims 12 and 16 are not addressed separately but it is respectfully submitted that those claims are allowable as depending from an allowable independent claim and further in view of the amendments to Claim 1, and the comments provided above. Applicants respectfully submit that Claims 12 and 16 are similarly neither anticipated by, nor obvious in view of the cited reference, and reconsideration thereof is respectfully requested. It is also submitted that Claims 12 and 16 also add their own limitations which renders them patentable in their own right. Applicants respectfully reserve the right to argue these limitations should it become necessary in the future.

V. Claim Rejection under 35 U.S.C. §103(a)

Claims 3-11 were rejected under 35 U.S.C. §103 as being unpatentable over Crinon in view of Hansen. It is respectfully submitted that Claims 3-11 are allowable as depending from allowable independent claims and further in view of the amendments and comments to Claim 1 provided above, which are hereby incorporated by reference. Applicants respectfully submit that these Claims are neither anticipated by, nor obvious in view of the cited references, and reconsideration thereof is respectfully requested. It is also submitted that this claim also adds its own limitations which renders it patentable in its own right. Applicants respectfully reserve the right to argue these limitations should it become necessary in the future.

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VI.   Conclusion

In view of the above amendments and remarks, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and reconsideration thereof is respectfully requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this reply, including any fee for extension of time, which may be required.

Respectfully submitted,

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